

# Sever's Disease

**T**he calcaneal apophysis is a growth center where the Achilles tendon and the plantar fascia attach to the heel. It first appears in children aged 7 to 8 years. By ages 12 to 14 years the growth center matures and fuses to the heel bone.

Injuries can occur from excessive tension on the Achilles tendon and the plantar fascia, or from direct impact on the heel. Excessive stress on this growth center can cause irritation of the heel, also called Sever's disease.

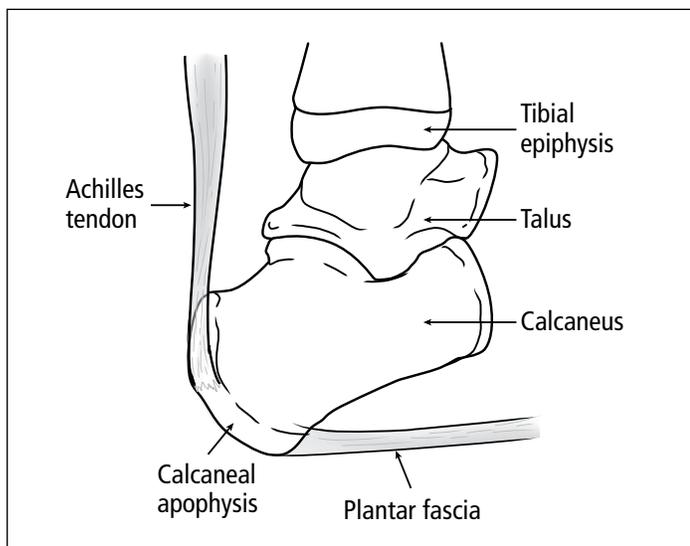


Diagram of the heel.

## Symptoms

Athletes with Sever's disease are typically aged 9 to 13 years and participate in running or jumping sports such as soccer, football, basketball, baseball, and gymnastics. The typical complaint is heel pain that develops slowly and occurs with activity. The pain is usually described like a bruise. There is rarely swelling or visible bruising. The pain is usually worse with running in cleats or shoes that have limited heel lift, cushion, and arch support. The pain usually goes away with rest and rarely occurs with low-impact sports such as bicycling, skating, or swimming.

## Physical exam

A physical exam of the heel will show tenderness over the back of the heel but not in the Achilles tendon or plantar fascia. There may be tightness in the calf muscle, which contributes to tension on the heel. The tendons in the heel get stretched more in patients with flat feet. There is greater impact force on the heels of athletes with a high-arched, rigid foot.

## Tests

The doctor may order an x-ray because x-rays can confirm how mature the growth center is and if there are other sources of heel pain, such as a stress fracture or bone cyst. However, x-rays are not necessary to diagnose Sever's disease, and it is not possible to make the diagnosis based on the x-ray alone.

## Other conditions that cause heel pain

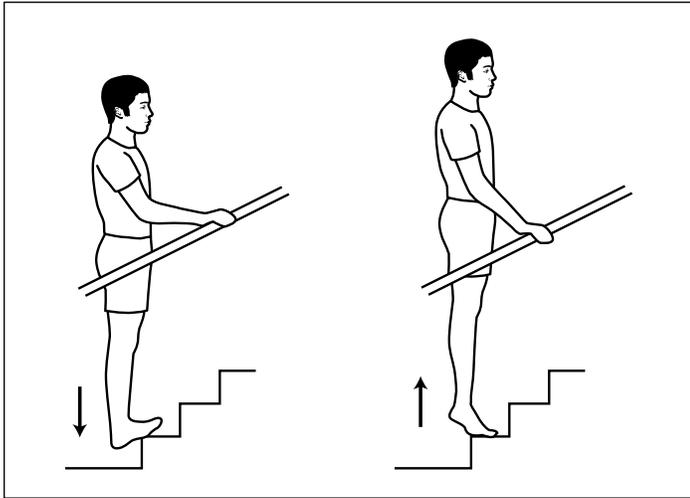
Heel pain can also be caused by a stress fracture in the heel, bursitis, tendonitis, bone cysts, and rheumatologic disorders. If the athlete is not active in impact sports or is not between age 9 and 13 years, other conditions should be considered.

## Treatment

The following are different treatment options:

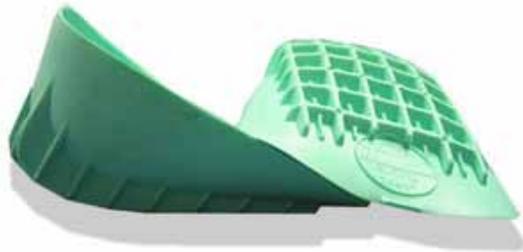
- **Rest and modify activity.** Limit running and high-impact activity to rest the heel and lessen the pain. Choose one running or jumping sport to play at a time. Substitute low-impact cross-training activities to maintain cardiovascular fitness. This can include biking, swimming, using a stair-climber or elliptical machine, rowing, or inline skating.
- **Reduce inflammation.** Ice for at least 20 minutes after activity or when pain increases. Nonsteroidal anti-inflammatory drugs (NSAIDs) may also help.

- **Stretch the calf.** Increase calf flexibility by doing calf stretches for 30 to 45 seconds several times per day.



Calf strengthening can be performed by toe raisers on the edge of a step.

- **Protect the heel.** The shoe may need to be modified to provide the proper heel lift or arch support. Select a shoe with good arch support and heel lift if possible. Try heel lifts or heel cups in sports shoes, especially cleats. Try arch support in cleats if flat feet contribute to the problem.



Heel cups.

- **Take it one step at a time.** Gradually resume running and impact activities as symptoms allow.

Sever's disease usually goes away when the growth plate (apophysis) matures, which should be by age 12 to 13 years in females and 13 to 14 years in males.

### NOTES

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